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An Account of the Fossil Skeleton of the Proteo-Saurus. By Sir Everard Home, Bart. V.P.R.S. Read March 4, 1819. [Phil. Trans. 1819, p. 209.]

After reverting to the contents of his former papers on this subject, Sir Everard describes in the present communication a specimen of the animal nearly in an entire state, and of which most of the parts are in such good preservation, as to enable him to correct and complete his former accounts, the only parts wanting being the bones of the pelvis and the lower part of the sternum. A drawing of the natural size accompanies this paper, in which, says the author, the parts are so clear and distinct, as to render any verbal description superfluous.

Reasons for giving the name Proteo-Saurus to the Fossil Skeleton which has been described. By Sir Everard Home, Bart. V.P.R.S. Read April 1, 1819. [Phil. Trans. 1819, p. 212.]

The specimen of the fossil skeleton, described in the author's last paper, having proved that the animal had four legs, and that its progressive motion through water is similar to that of fishes, he was led to look for its place in the scale of gradation between amphibia and fishes. With this view he examined the vertebræ of the Proteus, which he found cupped at both extremes, in which respect it resembles the fossil animal: it is also nearly allied to it in having feet; and were it not that the bones of the chest show that the lungs were more capacious, and that in the largest specimens there is not sufficient space between the occiput and first rib for gills, Sir Everard would have ventured to have called it Proteus; but as it is highly probable that this animal breathed by lungs only, and appears to have been capable of the two kinds of progressive motion, it may be called Proteo-saurus.

Some Observations on the Peculiarity of the Tides between Fairleigh and the North Foreland; with an Explanation of the supposed Meeting of the Tides near Dungeness. By James Anderson, Captain in the Royal Navy. Communicated by the Right Hon. Sir Joseph Banks, Bart. G.C.B. P.R.S. Read March 25, 1819. [Phil. Trans. 1819, p. 217.]

After advertizing to the circumstances upon which the generally adopted opinion is founded, that the tides meet between Dungeness Point and Rye Harbour, Captain Anderson describes the peculiarity of the Channel at that point, and its very sudden contraction between Dungeness and Cape D'Alprée, and between the South Foreland and Calais Point; so that the western tide meets with a resistance to its course at Dungeness and Cape D'Alprée; where, from the passage being insufficient to discharge the water brought from the westward, it must accumulate until it deepens and widens the Chan-

nel, so as to become adequate to the discharge of the water. The peculiarities of the rise and fall of the tides at adjacent places, is referred by the author principally to the accumulation that takes place in these basins. That the tides do not meet at Dungeness in a line across the Channel, is further proved by the absence of that violent concussion of water which in such a case would ensue; the fact being, that the formation of the coast by gradually altering the course of the tide between the South Foreland and buoy of the Nore, from E.N.E. to W.N.W. within the stream of the Goodwin Sands, occasions a gentle blending of the waters, so that there is only a strong eddy about the Kentish Knock, and a foamy rippling where they meet and proceed onwards together.

On the Ova of the different Tribes of Opossum and Ornithorhynchus.
By Sir Everard Home, Bart. V.P.R.S. Read March 25, 1819.
[*Phil. Trans.* 1819, p. 234.]

With his previously acquired knowledge respecting the formation of the ova of quadrupeds in *Corpora lutea*, Sir Everard proceeds to inquire into that of the Opossum tribe, the ova of which are not formed in the same manner, but make two distinct gradations between the quadruped and *Ornithorhynchus paradoxus*, which last approaches so near to the bird, as to complete the link of gradation between the quadruped and bird in their mode of generation. Sir Everard first describes the formation of the ova in the Kangaroo, which, when expelled from the *Corpus luteum*, receive a yolk in the Fallopian tube, and afterwards the albumen in the uterus. The foetus, when expelled from the uterus into the marsupium, attaches itself to the nipple, as described in the 85th and 100th volume of the Philosophical Transactions. In the Kola and Wombat, and great and small Opossum, instead of *Corpora lutea* there are yolk bags imbedded in the substance of the ovarium; and there are two uteri, with a Fallopian tube to each, the ovum in each uterus being separately impregnated in its own cavity.

The mode of formation of the ova in the *Ornithorhynchi*, forms the intermediate link between the Opossum and bird. The yolk bags are imbedded in the ovaria; and instead of a regular uterus, each Fallopian tube swells out into a cavity, in which the ova are impregnated.

The Results of Observations made at the Observatory of Trinity College, Dublin, for determining the Obliquity of the Ecliptic, and the Maximum of the Aberration of Light. By the Rev. J. Brinkley, D.D. F.R.S. and M.R.I.A. and Andrews Professor of Astronomy in the University of Dublin. Read April 1, 1819. [*Phil. Trans.* 1819, p. 241.]

The obliquity of the ecliptic, as deduced from the early observations by the Greenwich quadrant, compared with the present ob-